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EXAMINER	
HO, CHUONG T	

ART UNIT	PAPER NUMBER
2664	14

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/873,316	BOTHA, LOUIS JACOBUS
	Examiner	Art Unit
	Chuong Ho	2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

1. The amendment filed 01/06/04 have been entered and made of record.

2. Applicant's amendment with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

3. Claims 1-17 are pending.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-17 rejected under 35 U.S.C. 102(e) as being anticipated by Shiu et al. (U.S.Patent No. 6,624,767 B1).

In the claim 1, see figure 2B, Shiu discloses referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222 (see col. 13, lines 58-67); comprising:

A memory buffer to store the data (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving;

Coupled to memory buffer, for performing a first (264) and second (252) de-interleaving of the data stored in memory buffer, wherein means includes means for reading and writing the data to the memory buffer in connection with first (264) and second (252) de-interleaving (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that

performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222).

6. In the claim 6, see figure 2B, Shiu discloses referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222 (see col. 13, lines 58-67); comprising:

A demodulator (see col. 3, line 51, col. 13, line 27) coupled to the wireless link (see col. 3, lines 50-52); a decoding (see col. 5, lines 35-36)/ demultiplexing (see col. 5, lines 23-24) unit, coupled to demodulator (see col. 3, line 52, col. 13, lines 27);

A memory buffer to store the data (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines

22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving;

Coupled to memory buffer, for performing a first (264) and second (252) de-interleaving of the data stored in memory buffer, wherein means includes means for reading and writing the data to the memory buffer in connection with first (264) and second (252) de-interleaving (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222); and a medium access control layer coupled to decoding (see col. 13, lines 50-55) /demultiplexing (see col. 5, line 24, see col. 10, lines 57-58) unit.

7. In the claim 9, see figure 2B, Shiu discloses referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-

interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222 (see col. 13, lines 58-67); comprising:

A memory buffer to store the data (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving;

Coupled to memory buffer, for performing a first (264) and second (252) de-interleaving of the data stored in memory buffer, wherein means includes means for reading and writing the data to the memory buffer in connection with first

(264) and second (252) de-interleaving (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222).

8. In the claim 11, see figure 2B, Shiu discloses referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222 (see col. 13, lines 58-67); comprising:

A memory buffer to store the data (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that

is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving;

Coupled to memory buffer, for performing a first (264) and second (252) de-interleaving of the data stored in memory buffer, wherein means includes means for reading and writing the data to the memory buffer in connection with first (264) and second (252) de-interleaving (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222).

9. In the claim 13, see figure 2B, Shiu discloses referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a

second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222 (see col. 13, lines 58-67); comprising:

A demodulator (see col. 3, line 51, col. 13, line 27) coupled to the wireless link (see col. 3, lines 50-52);

A memory buffer to store the data (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving;

Coupled to memory buffer, for performing a first (264) and second (252) de-interleaving of the data stored in memory buffer, wherein means includes means

for reading and writing the data to the memory buffer in connection with first (264) and second (252) de-interleaving (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222); decoding (see col. 13, lines 50-55) the output data stream.

10. In the claim 15, see figure 2B, Shiu discloses referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222 (see col. 13, lines 58-67); comprising:

A demodulator (see col. 3, line 51, col. 13, line 27) configured to demodulate the data;

A memory buffer to store the data (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512.

Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving);

Coupled to memory buffer, for performing a first (264) and second (252) de-interleaving of the data stored in memory buffer, wherein means includes means for reading and writing the data to the memory buffer in connection with first (264) and second (252) de-interleaving (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222).

11. In the claim 2, Shiu et al. discloses performs second de-interleaving as the data is written to memory buffer and performs first de-interleaving as stored data is read from memory buffer (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving).

12. In the claims 3, 16, 17, Shiu et al. discloses memory buffer stores the data, and wherein said means performs first and second de-interleaving as the stored data is read from memory buffer (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols

to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving).

13. In the claim 4, Shiu et al. discloses the data comprises radio frames (see col. 8, lines 34-44), memory buffer comprises a plurality of radio frame blocks, and means causes radio frames to be stored in radio frame blocks (see col. 9, lines 47-67).

14. In the claim 5, Shiu et al. discloses the data is transmitted over one or more physical channels, wherein each of radio frames comprises a physical channel frame associated with each physical channel, each of radio frame blocks comprises a physical channel block associated with each physical channel, and means causes said physical channel frames to be stored in said physical channel blocks (see col. 8, lines 34-44, col. 9, lines 47-67).

15. In the claim 7, Shiu et al. discloses memory buffer comprises a plurality of radio frame blocks (see col. 8, lines 34-44, col. 9, lines 47-67).

16. In the claim 8, Shiu et al. discloses each of radio frame blocks comprises a physical channel block (see col. 8, lines 34-44, col. 9, lines 47-67).

17. In the claim 10, Shiu et al. discloses wherein read/write unit perform second de-interleaving as the data is written to memory buffer and performs first de-interleaving as stored data is read from memory buffer (see figure 2B, col. 13, lines 58-67, referring back to FIG.2B, the processing from second de-interleaving 252 to first de-interleaving 264 can be efficiently achieved by properly managing buffer 512. Specially, the second de-interleaving 252 can be achieved by writing the symbols to buffer 512 in a second permutated order that is complementary to that performed for the second interleaving 238. The first de-interleaving 264 can be achieved by reading the symbols from buffer 512 in a first permutated order that is complementary to that performed for the first interleaving 222; see col. 9, lines 22-25, second de-interleaving 252 can achieved at the receiver unit by writing the received symbols for each physical channel to the memory bank in a permutated order complementary to that used at the transmitter unit to achieve the second interleaving, see col. 12, lines 27-30, first de-interleaving 264 can be achieved at the receiver unit by reading the received symbols for each traffic from memory banks in a permutated order complementary to that used at the transmitter unit to achieve the first interleaving).

18. In the claims 12, 14, Shiu et al. reassembling one or more physical channels from the data stored in memory buffer (see col. 8, lines 34-44, col. 9, lines 47-67); perform a second removal of discontinuous transmission indication bits from the data stored in memory buffer (see col. 9, lines 23-67);

demultiplexing (see col. 10, lines 58-60) the data stored in memory buffer into a plurality of transport channel (see col. 5, line 24); and reassembling transport blocks from data stored in memory buffer wherein the data comprises radio frames (see col. 8, lines 34-44, col. 9, lines 47-67).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Ho whose telephone number is (703) 306-4529. The examiner can normally be reached on 8:00AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (703) 305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chuong Ho
Examiner
Art Unit 2664

03/17/04

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